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Agricultural Marketing

Trends and Prospects

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Editor, Milton Hoffman

Assistant editor, Jeanne Starr Park

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TRENDS AND PROSPECTS

THE DEMAND FOR FARM PRODUCTS



by Daniel W. Burch

1959 prospects point to a substantial rise in consumer income, heavy supplies of farm products generally, and slightly lower agricultural exports through midyear.

These are the most important factors underlying the 1959 outlook for marketing of farm products, according to economists in the Agricultural Marketing Service, USDA.

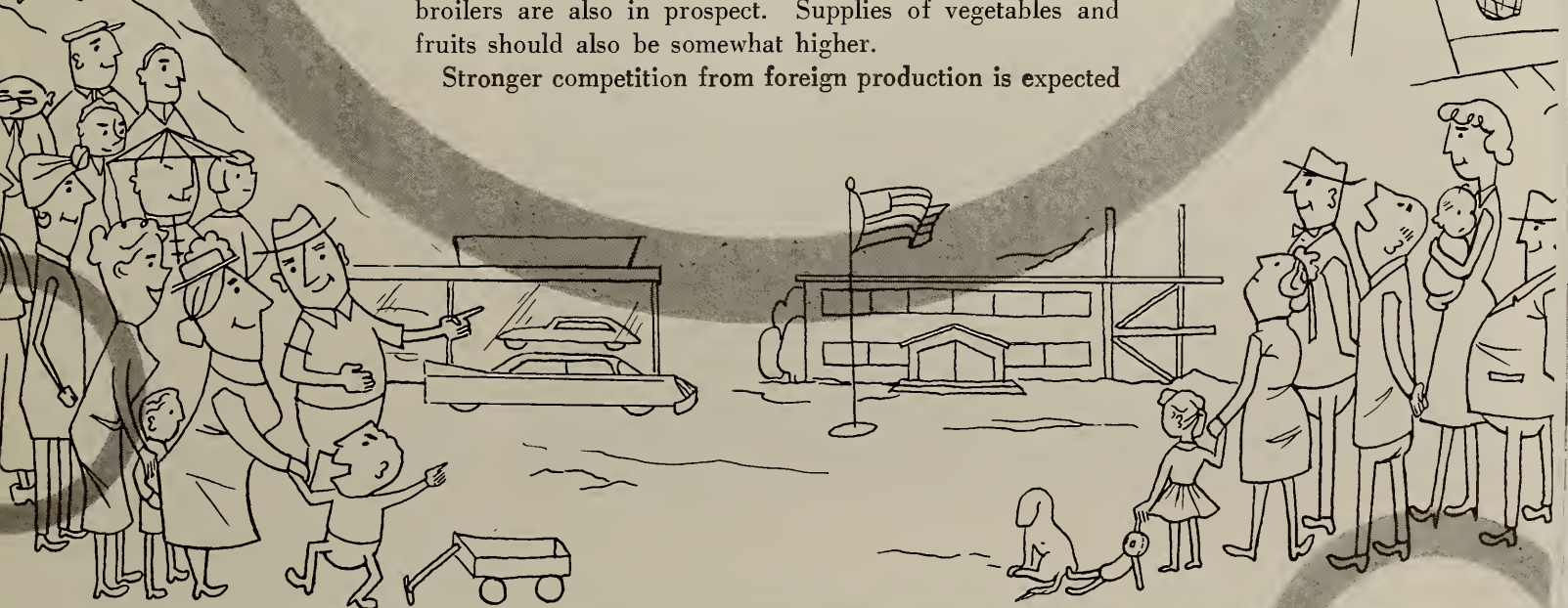
Domestic demand for farm products, at a high level in 1958, will likely strengthen further in 1959.

The recession of 1958 had little effect on the demand for food. Consumer incomes were well maintained, as increases in unemployment compensation and Social Security benefits and higher farm income largely offset reduced employment. In 1959, with continued improvement in the economy, consumer expenditures for food will rise, even though prices to the consumer may average a little lower.

Not only will consumers have more money to spend but they will find a more varied and more abundant food supply this year than they did during 1958.

The supply of meat is expected to be a little higher in 1959 than in 1958, with the increase chiefly in pork. More broilers are also in prospect. Supplies of vegetables and fruits should also be somewhat higher.

Stronger competition from foreign production is expected



to bring about a small decline (for the year ending June 30th) in total U. S. agricultural exports. Production in foreign countries is at a high level and it is continuing to expand.

General Economy

Economic activity, which declined between late 1957 and early 1958, has regained much of the drop since last spring.

During the last 7 months, industrial output and employment have improved, though they are not yet back to the 1957 highs. Consumers have increased their purchases of goods and services; residential construction has picked up.

Federal spending has started to increase and State and local government spending continues to expand. The decline in business investment has leveled out.

During 1959 the output of the economy is likely to be substantially higher than in 1958 as the recovery continues, bringing higher levels of economic activity and employment.

Consumer incomes after personal taxes are expected to rise significantly in 1959. Furthermore, consumer incomes after adjustment for price changes will likely improve as the consumer price level during 1959 is likely to be fairly stable with some increases in non-farm items largely offset by declines in some food prices.

With higher incomes, consumers

should increase their expenditures during this year. Some gain is likely for consumer durable goods. A high rate of housing completions should raise the demand for appliances and other household goods.

Expenditures for nondurable goods and for services which were only slightly affected by the recession should continue very strong in 1959.

Consumers have continued to spend about the same proportion of their income on food as in other recent years. With rising incomes likely in 1959, consumers probably will also increase the amount of money that they spend on food.

Although consumer demand for food is likely to be even stronger this year than in 1958, the increased flow of products to market probably will bring a slight reduction in the average prices farmers receive. Much of the decline in the average is expected to result from substantially lower prices for hogs.

Marketings probably will increase enough to offset lower prices, and farmers are expected to receive about as much cash from sales of farm products as in 1958. However, the acreage reserve program of the Soil Bank has been discontinued. Payments under the 1958 program amounted to about \$700 million. Consequently, the gross income realized by farm operators may be down a little from 1958 when it was the highest on record.

Farm production expenses, which have been trending steadily upward for

a number of years, are likely to increase further in 1959. The pinch between higher costs and a slightly lower gross is expected to reduce the net income realized by farm operators 5 to 10 percent below 1958 when it was 20 percent above 1957 and at a 5-year high. But with the economy in high gear, income of farm people from nonfarm sources may be up some. In recent years, off-farm income of farm people has been equal to around half of realized net income from farming.

To sum up the income outlook, farmers in 1959 will have nearly as much income to spend *for all purposes* as in any past year. But after they have paid production expenses, the amount they will have to spend for living and for new investment probably will be somewhat lower than in 1958.

Supplies of Farm Products

Crop production in 1958, much of which will be marketed in 1959, is about a tenth larger than 1957 and at a new high.

No one can tell at this point what crop production may be in 1959. The record 1958 output was due partly to very favorable weather. But, even with average growing conditions, crop output could be about as large in 1959 as in 1958, considering the continuing improvements in farm production technology and the return to use of some 17 million acres withdrawn from wheat, cotton, corn, rice, and tobacco under the 1958 acreage reserve. Only part of this will be offset by further expansion of the Soil Bank's Conservation Reserve.

With heavy feed supplies and favorable livestock-feed price relationships, livestock output is increasing, particularly for hogs, eggs, and poultry. Cattle numbers are increasing but beef production is not likely to rise much in 1959.

Stocks of wheat, which have been moderately reduced in recent years, will rise to a new high this crop year. Stocks of corn and other feed grains, which have risen steadily since 1952, will also reach a new record. Stocks of cotton which were reduced sharply in the last 2 years may show a small further reduction in the current season.

RECORD FARM MARKETINGS IN 1958

Record harvests of 1958 brought a record volume of farm products into our marketing system. Last year, the physical volume of farm marketings ran 2 percent above the previous record of 1956; 7 percent above 1957.

Marketings of food grains, feed crops, and oil crops all reached record highs. Even cotton sales were up some over the 1957 low level. All told, the volume of crops marketed in 1958 was 9 percent larger than the previous high in 1956.

Livestock and livestock products had a slightly smaller sales volume in 1958 than a year earlier. Sales of poultry and eggs set a new record high—for the third year in a row. But marketings of meat animals were down from the 1957 level.

The author is an analytical statistician in the Agricultural Economics Division, AMS.

COSTS in Marketing Farm Products



THOSE who work for food processing, wholesaling, and retailing firms took home slightly larger paychecks in the first 3 months of 1958. Their hourly earnings averaged \$1.97—about 8 cents more than during the same period in 1957.

This represents a 4-percent increase in the past year, but it does not equal the August-to-August increases in most recent years.

Employees in food marketing did, however, get a little higher boost in wages than the average worker in the manufacturing industries and in retail trade.

Textile workers and those employed in retail apparel and accessories stores didn't see much change in their paychecks. And, although the tobacco manufacturing industry had a 7 percent larger hourly wage from August to August, this was only because of an exceptionally sharp decline in wages in August 1957. The July-to-July average indicated only a 3 percent increase.

While wages comprise a major part of the labor costs, employers also expend substantial sums on fringe benefits, such as social insurance funds, group health plans, and other welfare programs. The cost of these "employee extras" has risen at a faster rate than hourly earnings.

All told, labor costs account for about 46 percent of the marketing bill for food

and an even larger part of the bill for marketing textile products.

Economists in the Agricultural Marketing Service believe hourly earnings will continue to move upward in 1959. Wage agreements about to be negotiated in several of the larger industries will, no doubt, be reflected in food processing, wholesaling, and retailing. A decrease in unemployment will tend to push wages up some. And, the substitution of machines for manual labor will decrease the proportion of lower paid workers and increase hourly wages.

Transportation is another phase of the marketing process that has consistently grown more costly. From the end of World War II through 1957, the railroads put 14 general freight rate increases into effect. These meant a 79 percent increase in the cost of moving agricultural commodities.

In February and September of 1958, the Interstate Commerce Commission authorized further rail rate increases. Rail transportation charges for agricultural products affected by this rate rise will go up about another 2 percent.

But, at the same time the railroads have been getting these rate increases, they have been making selective rate reductions on certain farm products. Within the past year, they have established incentive rates on vegetables moving from California and Arizona to the Midwest and the East. They have set up rate schedules to encourage heavier loading of railroad cars, and they have offered "per car" rates on

Florida vegetables shipped to northern markets.

Each of these rate-reduction plans has been designed to meet the competition of the trucking industry and to regain some of the traffic that has recently shifted from rail to truck.

Ratewise, motor carriers have generally followed the pattern set by the railroads. So have barge lines operating within the limits of the U. S.

Rising marketing costs are also apparent outside the areas of labor and transportation. The cost of containers and packaging materials, motortrucks, machinery and equipment, and many other commodities bought by marketing firms continued to rise through 1958.

Construction costs also went up, as did rents, insurance rates, and many State and local taxes.

One of the few things marketing men didn't pay quite as much for in 1958 was bituminous coal and some petroleum products. Interest rates also were down slightly.

Yet, despite the upward trend in the cost of almost all marketing materials and operations, total profits of corporations manufacturing food products were larger in the first half of 1958 than in the same period in 1957. Profits as a percent of sales or of stockholders' equity, however, were a little less than a year ago.

A more detailed analysis of costs and profits is available in the November 1958 issue of *The Marketing and Transportation Situation*, an AMS publication.

The average hourly earnings of food marketing firms in this article are weighted composite earnings calculated by AMS from data of the U. S. Department of Labor.

Consumers' Expenditures for Farm Foods



by Marguerite C. Burk
and Forrest E. Scott

EVERYBODY talks about the cost of food. But, just how much money is being spent for food these days? What proportion of our Nation's income goes for U. S. farm-produced food and how much of this goes to marketing agencies; how much to producers?

Agricultural Marketing Service economists report that in 1957 consumers spent an average of \$327 for U. S. farm-produced food. This accounted for 84 percent of all consumer expenditures for food.

In turn, food purchases took about 22 percent of the country's disposable income. Since 4 out of the 22 percent went for fish and imported food items, this meant that about 18 percent of our Nation's income went to American farmers and marketing agencies.

Ten years earlier, 22 percent of the disposable income went for purchases of farm-produced commodities. That was just after the war when farm prices for food were at their peak and just before prices of other consumer goods and

services had risen much above the controlled levels of the war period.

Going back still farther—to 1939 and 1929—AMS economists found that purchases of domestically produced farm foods took 20 percent of the per capita income.

From recent work on food and agricultural statistics, these researchers have developed new ways to measure the total marketing bill for all foods produced by American farmers. They found that expenditures for marketing farm food products to U. S. civilians went up from \$10 billion in 1929 and 1941 to \$22.8 billion in 1948 and \$35.6 billion in 1957; farmers received \$7 billion in 1929 and 1941, but \$19.2 billion in 1948, and \$19.5 billion in 1957.

These figures tell us that consumers in 1929 and again in 1941 paid 57 or 58 percent of their food money for marketing services between the farm gate and the cash register of the retail store or restaurant.

But, during World War II and the immediate postwar years, farm costs and prices rose more than nonfarm, so only 54 percent of consumer expenditures for U. S. farm foods went to marketing agencies in 1948.

Since that time, both marketing costs per unit and the amount of marketing services demanded by consumers have increased markedly. As a result, 65 percent of total expenditures for farm foods went to agricultural marketing in 1957.

Researchers do not have enough data to measure total marketing costs for all the individual foods, but they can measure the farm to retail marketing bill. Statistics show that substantial increases in the volume of food marketed plus an increase in unit marketing costs pushed the farm-to-retail charges for meat products up 62 percent between 1948 and 1957. Marketing charges for fruits and vegetables rose 58 percent. Although other farm food products did not undergo such large increases, marketing charges for most of these products also trended upward.

Despite this rather large increase in the marketing bill, the overall cost to consumers of U. S. farm-produced food did not rise proportionately. Nor did

farm food expenditures keep pace with rising incomes.

While per capita disposable incomes rose 38 percent between 1948 and 1957, expenditures for *all* food on a dollars-per-person basis went up 18 percent.

Advancing prices accounted for somewhat more than half of the increase in food expenditures. Another 15 or 20 percent resulted from a rise in consumption and a substitution of more expensive for less expensive foods.

Also, in the decade between 1948 and 1957, many consumers substituted purchased food for home-produced food. Both farm and nonfarm families produced less of their own food in 1957 than in 1948. Economists figure this substitution accounted for 5 to 10 percent of the increase in per capita expenditures.

Another 5 percent probably came from more people dining out. Americans ate more meals in restaurants and other eating places in 1957 than they did 10 years earlier. Since these meals cost more than food prepared at home, this, too, added to the amount spent on food.

Substitution of convenience foods for food requiring less processing or other marketing services apparently accounted for only a minor part of the rise in per capita food expenditures. Many of these foods cost no more than the foods they replaced, and some even cost less.

U. S. consumers will, however, spend more money for food in the next several years. At present, there are few, if any, signs of a reversal in the 20-year upward trend in marketing costs.

In addition to rising wages and other production costs, economists predict further increases in the volume of services offered and the volume of food products moving through the marketing system. Also, continued geographical specialization in production will call for more transportation services, and rising incomes and increasing numbers of working women will strengthen the demand for convenience foods.

All this will result in more money being spent on food in the next few years. Food expenditures, however, are still expected to require a smaller proportion of the per capita income.

Use of Trading Stamps

in Marketing Food



by Henry T. Badger

IT WAS in the roaring period of the "Gay 90's" that trading stamps were first used by retailers as a promotional device to attract and hold customers. But it was not until after the Korean War that the big "roar" over trading stamps really began. Then, the country went on a trading stamp spree.

Take the year 1956, for example. Economists estimate that during this one year alone, trading stamps cost retailers \$375 million. Some 168 billion stamps were distributed on retail sales totaling approximately \$20 billion.

For each man, woman, and child living in the United States that year, 1,000 trading stamps were given out. Over half of these came from retail food stores.

It is estimated that the value of the articles consumers get in redeeming these stamps amounted to 2 percent of the money spent at stamp-giving stores.

Because of the tremendous interest in this promotional device and the effect it has had on modern-day merchandising methods, the Agricultural Marketing Service has been making a study of trading stamps. It soon will release its third report on the subject.

This research study estimates the scope and size of the industry through national survey. It reports not only the

widespread growth of the trading stamp industry, but discusses who actually bears the cost of the stamps and who benefits from them.

The study, which includes supermarkets in 21 cities between November 1953 and March 1957, revealed that, on the average, food prices in stamp-giving stores increased 0.6 percent more than those in nonstamp stores.

This price difference does not measure the overall impact of stamps on the level of food prices. Prices in nonstamp stores may have been raised or lowered as a result of their competitors adding the stamps.

AMS economists find that most of the cost of buying and handling the stamps is absorbed by the stores themselves. Retail food stores have several ways of doing this. They can reduce the amount of money spent on other promotional devices; they can try to increase their sales volume; or, they can accept lower profits.

A comparison of 5 stamp and nonstamp food chains shows that those giving out stamps boosted their sales relative to those not giving them. Before stamps were added, both groups had fairly stable shares of the sales volume. But after the introduction of trading stamps, the stamp-giving chains increased their share of the total sales volume by 10 percent.

Profits as a percentage of sales decreased slightly in the stamp chains.

The 5 nonstamp chains, on the other hand, witnessed a steady increase in profits per sales dollar. (The study did not report data on the effects of stamp use on total profits of these groups.)

But what about the consumers? How do stamps affect them?

The cost of food, plus stamps, is the consumer's first interest. But, it is not his only one. He is also interested in what he can expect in return for his accumulated stamps.

According to AMS economists, the consumer who redeems his stamps receives in return merchandise valued at about 2 percent of each retail dollar spent in filling his stamp book.

Thus, if the consumer pays 0.6 percent more for food in a stamp-giving store but redeems his stamps at the rate of 2 percent, he benefits by the extent of this difference. That is, if you don't count the time and trouble it takes to save and redeem the stamps.

Also, the consumer needs to compare prices, quality of food, and services in stamp and nonstamp stores before making up his mind about stamps.

Nonfood items in supermarkets

Food products in supermarkets are facing increased competition from nonfood items. Sales volume of these products is now estimated at \$4.5 billion. This represents a seven-fold increase during the past decade.

Henry T. Badger is a staff member of the Marketing Research Division of AMS.



VERTICAL INTEGRATION IN LIVESTOCK



by Gerald Engelman

VERTICAL integration within agriculture has grown rapidly in recent years, and it has taken many forms.

In the production of hogs, for example, integration may refer to either of two types of production arrangements: Sow-and-pig contracts or feeder-pig contracts. With the sow-and-pig arrangement, bred sows are leased to the farmer who then finances the production program on his own. With the feeder-pig contract, the farmer usually contributes only the housing, equipment, and labor necessary for production; a feed company or other integrator provides everything else.

Integration in the cattle industry is something entirely different. It occurs mostly in the large commercial feedlots of the West Coast States and may extend either forward from the rancher or backward from the packer or chain store. In the first instance, the rancher retains

The author is Head of the Livestock Section of the Marketing Research Division, AMS.

ownership of the cattle through the feeding period; in the second, the packer or chain store itself owns the cattle.

The growth of the large commercial feedlot is, perhaps, one of the most significant developments in the livestock industry in recent years. Triggered by the West's increasing demand for "fed" beef, commercial feedlots have expanded rapidly. About one-third of the fed cattle in this country comes from the feedlots in the West.

Often referred to as "beef factories," these feedlots are in continuous operation the year around. They feed anywhere from 1,000 to 30,000 head of cattle annually, with livestock moving in and out of some of the larger lots every week of the year.

Although the large commercial feedlot is not always a contract operation, it has, to some extent, given rise to contractual arrangements for the feeding of beef cattle. Such contracts, however, vary considerably. Some are written; others are only verbal.

Contracts also vary in the extent of their coverage. Usually, though, the feedlot operator receives a daily per head handling fee, the actual cost of the ingredient feeds, and perhaps an allowance for the cost of milling the grains.

At present, less than half the cattle fed in western commercial feedlots are handled under custom arrangements. Packers, however, have been feeding some cattle for the past 10 or 20 years. Several chain store companies also entered the cattle feeding business during World War II when meat supplies were scarce.

Custom feeding arrangements are particularly well suited to both packers and chain stores. Yet, neither of these marketing groups have taken a very active part in the beef feeding business. Some chain stores have abandoned their operations, and many packers appear to be "in and out," depending on the profit prospects.

Both the commercial feedlots and the custom feeding arrangements appear to be more characteristic of the West than the Corn Belt. A few large commercial lots are located in the Missouri River area, and some contract feeding of cattle

is carried on in the Corn Belt. But, most of these contracts are production credit arrangements for feeding commercial protein supplements manufactured by certain firms.

Integration also has extended into the swine industry, but on a somewhat smaller scale. Marketing specialists figure about 2 to 5 percent of our production comes under contract arrangements.

During the past year, two general types of contracts were available to hog farmers—the feeder-pig contract and the sow-and-pig contract.

With a feeder-pig contract, the integrator, who is frequently a feed dealer, supplies the pigs and their feed. He also handles management problems, takes care of veterinary expenses, and later takes the hogs when they are ready for market.

The extent of this type of production contract is limited by the available supply of pigs. Feeder-pig contracts are most often found in the South and in the Middle Atlantic States.

The sow-and-pig contract provides for leasing bred sows to farmers. These contracts vary greatly as to the amount of control and management exercised by the integrators. Some contracts require growers to adopt the multiple farrowing system and to use the feed company's supplements as well as specified housing and equipment. The farmer, however, must make his own arrangements for production credit.

One feed company has a sow-and-pig contract that provides for a 50-cent bonus above the high-low average for No. 1 hogs. The No. 2 and No. 3 hogs are sold at the local market price.

A number of sow-and-pig contracts have been introduced along the fringes of the Corn Belt, in the Southeast, and in north Texas, Oklahoma, and Kansas.

Most packers are exploring the possibilities of contract farming, and a few have already made contracts. Some feed companies also are promoting contracts.

Pig hatcheries have been tried for about 10 years in Iowa, Wisconsin, and Minnesota. Most of these have discontinued operations because of various diseases and parasites, which thus far have been difficult to control. If these

problems are solved and pig hatcheries become truly successful, the plan will provide a tremendous impetus to swine integration.

Livestock cooperatives have already made progress in integration. Nearly all are studying the movement, and many are developing pilot operations to gain experience. Several are emphasizing grading and meat-type hogs. One group of cooperatives is pushing the establishment of swine-testing stations to develop meat-type hogs.

More integration is definitely in prospect for the livestock industry. But it is not expected to move either as fast or as far as broiler integration. Nor does it appear likely that the location of livestock production will shift as dramatically.

Integration, however, will aid in expanding hog production in areas other than the Corn Belt. Although swine production as a major enterprise probably never will move from the Midwest to the South and East, its growth in these areas will depend upon the availability of adequate feed supplies.

At the same time, the commercial feedlots of the West Coast will not supplant farmer-feeders in the Corn Belt during the next decade or so. There will be some growth in the number of cattle fed in these large feedlots.

The commercial feedlot has become firmly situated. It has been able to survive drastic price declines and, no doubt, will expand in the future with the growth in population in the West Coast States.

Custom feeding by chain stores and meat packers probably will not expand as steadily. These marketing agents are expected to continue their fluctuating policy of moving into the livestock feeding business when the profits look good and out when the situation is not so favorable.

Agricultural Exports

U. S. agricultural exports for the year ending June 30, 1959, are expected to total about \$3.8 billion. While this is considerably under the \$4.7 billion total of 2 years ago and somewhat under the \$4 billion of last year, it would place 1958-59 among the big 6 export years in U. S. agricultural history.

We Bought It At

by Rosalind C. Lifquist

DAY BY DAY, our "grocery" bill is getting to represent a lot more than an expenditure for food.

This is contrary to what might be expected. Today, families get much more of their food from the store than they did, say, 25 years ago. They are buying more of their milk, more of their meat, and more of their bakery products. Yet, frequently, grocery items account for only a small part of the supermarket bill—in fact, at times, there may be none at all on the list.

The changing character of our purchases in grocery stores re-emphasizes the old adage that "history oft repeats itself." Indeed, history is doing just that. Our food stores have almost completed a full cycle. From their early beginning as an integral part of a general store, they have passed through a period of specialty stores (the meat market, the bakery, the fruit and vegetable stands) and now are back as part of a one-stop-and-shop store.

At first glance, the present glamorized supermarket appears to be a far cry from the old general store centered around the pot-bellied stove and the open cracker barrel. Yet, in spite of its modern dress, there are some very basic similarities between these two. You'll find them alike in size, in location, and in the type of merchandise carried.

Size might seem a surprising comparison to make. Because, of course,

there is a vast difference in the physical size of the modern supermarket and the old country store. But think of it another way—think of the market area served by both of these stores.

In its heyday, the country store, like today's supermarket, was the "big" store in its area. It was centrally located and largely self-contained. It had some customers within walking distance, but most of its patrons used some form of transportation. They came on horseback in horse-drawn buggies in the early days and later they rode in Model T's. The open spaces on the street or even the small spaces between the fronts of stores were important then, too.

The country store and today's supermarket also sold much the same variety of merchandise. For a long time, a grocery store was almost synonymous with food store. A few other items were provided, but these consisted chiefly of cleaning supplies.

In recent years, however, these stores have added more and more nonfood convenience items. For example, in 1957, less than a fourth of the supermarket carried housewares; by 1957 about one out of 10 stocked them. Sales of nonfood items totaled about \$50 million in 1957, but by 1957 they amounted to \$300 million. Sales in grocery stores of health and beauty aids totaled more than \$90 million in 1957, a gain of 15 percent over 1956. This represents more than one-fifth of the total sales of these items.

A recent study of several supermarkets in the Indianapolis area illustrates the importance of nonfood items in consumers' expenditures. Out of \$300



The Grocery Store

spent for about 8,000 "baskets," an average of 20 percent went for nonfoods. Seven percent of these baskets contained no food at all.

Why have we virtually returned to the one-stop-and-shop store? Why have we traveled in this cycle? There are many reasons. But, basically, it's the trend toward suburban living. Homes are once more located away from the central business areas. Customers are coming greater distances to the store, and purchases are being made for longer periods of time rather than on a day-to-day basis.

These are some of the same conditions that existed during the era of the general store.

When the general store was in its prime, a major share of the population lived in rural areas. Homes were widely scattered, and people had to travel some distance to shop. In this situation, the one-stop-and-shop store worked out satisfactorily.

However, as our Nation became more and more industrialized, many left the farms to work in or near large cities. As the cities grew and became more densely populated, it was increasingly difficult to get to the central business district to shop. This favored the opening of the close-to-home neighborhood stores, particularly those catering to day-to-day needs—food, drugs, hardware, and the kind of odds and ends sold in variety stores.

These neighborhood stores, usually small and often family-owned and operated, might have given way earlier to

the larger supermarkets but for the depression of the thirties and the wartime restrictions of the early forties. These factors not only limited the construction of new stores, but also the amount and kind of goods available for sale.

Not until the end of World War II did the situation change. Then a virtual explosion took place. With more goods on the market and more money in our Nation's pocketbook, everyone went on a spending spree. Customers flocked to the stores. Existing stores began to make extensive repairs; construction was begun on many new stores. The food business became big business.

Many family-run neighborhood stores gave way to much larger and frequently more isolated stores which were owned and operated by corporations and chains. Today, these larger stores average about 16,000 square feet of floor space with about 70 percent of this allocated to selling space. And, though these large stores represent less than 10 percent of all grocery stores, they account for about two-thirds of the grocery sales.

In 1956, 19 of the large retail food organizations accounted for a third of the grocery business. Each of these had yearly sales of \$100 million or more.

The following year (in 1957), three food chains were included in a listing of the Nation's leading corporations with annual sales of at least a billion dollars. One of these chains ranked fifth on the list—just below such giants of industry as the two leading auto makers and a large private utility, and above others like the biggest steel cor-

poration and an electrical company.

Along with big business has come the need for a large sustained volume of sales. In order to survive and to meet the competition of other supermarkets, management is ever seeking ways to lure new customers or, at times, just to hold the ones they have. Such attractions include air-conditioning, Kiddie Korner for children, and even trading stamps.

These cost money, and competition has made it difficult to offset such expenses by raising food prices. As a result, some stores changed their sales practices; others took lower profits and all looked for ways to bolster income.

That's why many food companies have added more and more kinds of nonfood items to their line of groceries. These products sell at a higher rate of profit than most foods, and many are fair-traded, which lessens the opportunity for price-cutting by competitors.

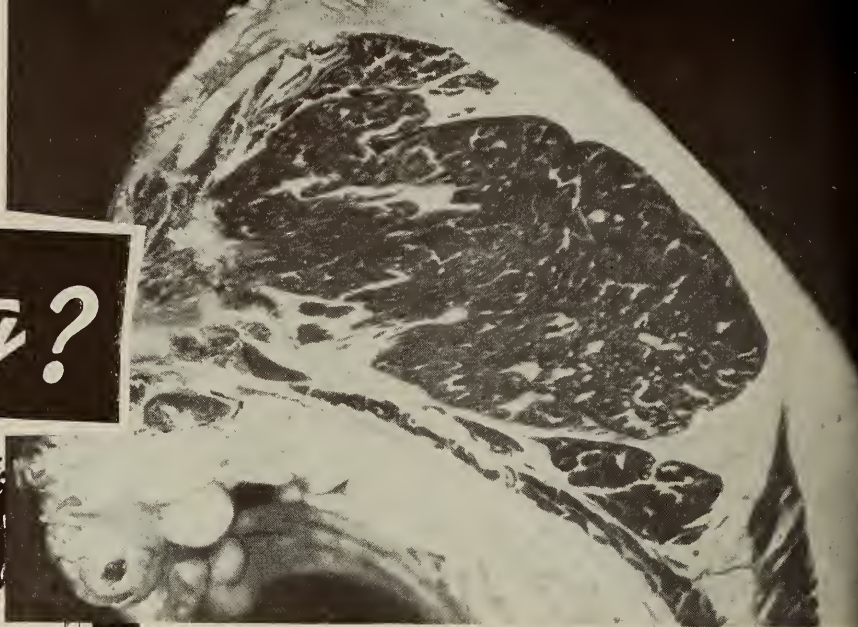
So, today, we find some "grocery" stores offering food as just one of several lines of merchandise. In stores like these, the consumers' "grocery" money buys a lot of things besides food.

One store, recently opened in Washington, D. C., offers "all the food and related merchandise usually in supermarkets . . . [plus] . . . 20,000 other items customarily found in department, variety, sporting goods, and hardware stores."

Such stores, of course, are still in the minority. But they represent a completion of the cycle. We are now back to the general store, albeit, a glorified version.

WHAT'S AHEAD FOR

beef grading?



This rib from a high-yielding carcass has thin covering of fat and superior conformation illustrated by large, plump rib eye.



ONE OF THE most significant changes in the long history of Federal standards for beef is now under consideration by the Livestock Division of the Agricultural Marketing Service, the USDA agency charged with carrying out the meat grading program.

The idea now being considered is the development of a dual grading system which would give separate identification to the "cutability" factor (or yield of preferred retail cuts) within each of the quality grades.

For instance, carcasses with Choice quality might be further classified into three different groups representing high, average, or low yields. These might then be identified as Choice No. 1, Choice No. 2, and Choice No. 3, or with some similar term for use in trade between

packer and retailer.

Probably the quality designation (the traditional grade mark such as USDA Prime, USDA Choice, etc.) would be the only part of the grade that would appear on the retail cuts since the yield designation would have little significance to the consumer who buys individual trimmed retail cuts.

However, to the retailer, the "cutability" of a carcass has a real monetary significance. Studies made by the Livestock Division show variations in carcasses within the Choice grade which result in differences in yield of the preferred retail cuts (trimmed cuts from the full loin, rib, square cut chuck, and round) of as much as 9 percent.

Translated into monetary terms, this means a difference in carcass cut-out

realization of approximately 10 cents per pound at current retail price levels. When applied to a 600-pound carcass, this amounts to \$60.

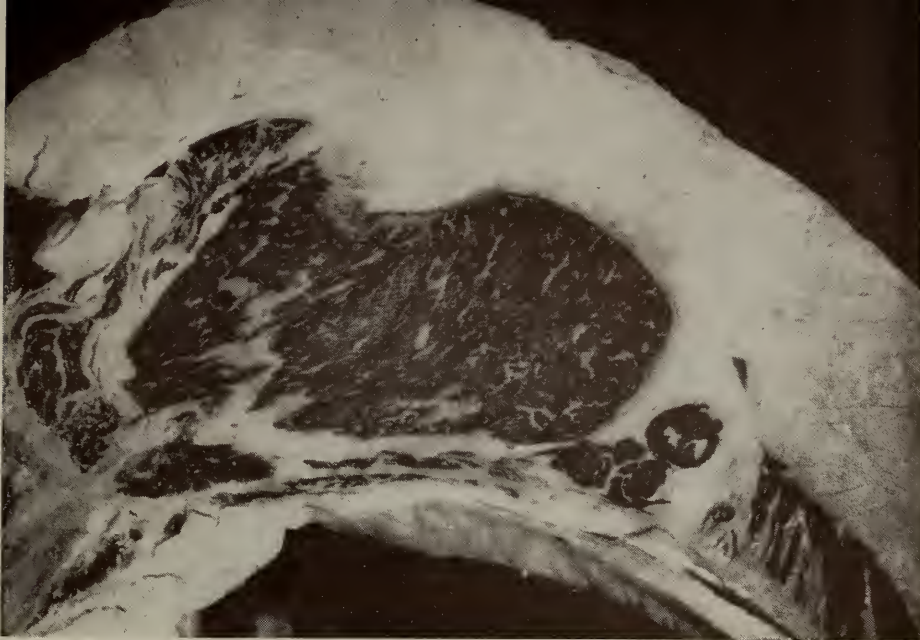
Of course, this is an extreme example. However, differences in yield between the high and low yielding groups within a grade average approximately five percent.

What are the variations that cause such divergence in cut-out yield between carcasses which carry the same quality grade? The answer lies primarily in two factors—conformation and finish.

Present Federal grade standards for beef are based on a measure of (1) meat quality—those characteristics of the flesh believed to be associated with the palatability of the beef, and (2) conformation—or the proportion of the various cuts within the carcass and the ratio of fat and lean to bone.

Finish, or fatness, is not used as a grade factor, though it is commonly and mistakenly believed to be. Quality of beef is judged, instead, primarily on the basis of marbling, firmness and color of lean, and maturity of the animal from which the carcass was derived. While marbling is associated to some degree with finish, it is much more closely associated with the fats on the inside of the carcass than the thickness of surface fat.

Conformation has a significant effect on the "cutability" of a carcass. Superior conformation means increased "cutability" or yield of the preferred retail



This rib, of the same quality grade, came from a low-yielding carcass. Note the heavy layer of fat and small, flat rib eye.

Feed-Grain Carryover

BASED on AMS estimates of feed grain production and utilization for the 1958-59 feeding year, the carryover of feed grains into 1959-60 will total around 75 million tons, more than a fourth above the 1957-58 total and nearly 4 times the amount carried over in 1952.

About half of the 55 million ton prospective build-up in stocks from 1952 to 1959 is from the bumper feed grain crops of 1957 and 1958. The other half was accumulated more slowly during the years 1952-56.

The large feed grain carryover into 1959-60 will undoubtedly dominate the outlook for feed grains in the next few years. It will play a major role in the overall feed situation, whether we have years of short supply or abundant harvests.

Protein-Feed Supply Up

ABOUT 4 percent more high-protein feed will be available to farmers during the 1958-59 feeding year. The total supply should run about 14.5 million tons.

The volume of protein feeds moving through the marketing process has increased steadily for the past several years. In 1957-58, it amounted to 13.9 million tons, nearly 2 million tons more than the 1952-56 average. Most of this increase came from expanded soybean meal production.

A record soybean crop is available for crushing in 1958-59, and the cottonseed crop is also up some over the 1957 crop. Both of these will contribute largely to the greater supplies of oilseed meal in 1958-59.

the effectiveness of the grade standards that the dual grading system has been originated and is being studied.

There are many additional questions and aspects of this modification that will need to be carefully considered.

Among them is the question of relating cutability to the slaughter animal. Experience in applying this factor to beef cattle has been rather limited to date, but it is the opinion of livestock specialists that it can and will be done if the cutability factor is recognized in carcass trading.

"Meat type" cattle may be the answer to increased emphasis on cutability. This type of beef animal, with the desirable combination of thick muscling with high quality meat and very little excess fat, does in fact exist.

But before any widespread production of this type of cattle can be expected, two developments appear essential. First, our marketing system must provide an identification of the desired type, and, secondly, our market prices must reflect adequate differentials to provide an incentive for producing meat-type cattle.

So the Livestock Division is proceeding with its efforts to develop the dual grading system. This is being done through extensive field testing and thorough studies of the plan.

Before any definite proposal can be made, many demonstrations, consultation with the meat and livestock industries, and careful consideration will be required.

cuts of meat.

Finish, however, has the opposite effect. In other words, the greater the degree of finish, the lower the "cutability."

Since carcasses within grades tend to be more uniform in conformation than they do in their relative quantity of trimmable fat, the finish of the carcass, in a particular grade, has considerably greater influence on the yield of cuts than does conformation.

USDA livestock experts have studied many objective measures of both conformation and finish. Several of these measures were fairly highly correlated with the yield of retail cuts. Generally the best combination of objective measures studied included carcass weight, length of loin, depth of fat over the rib eye, and round circumference.

However, it was found that the subjective evaluation of finish and conformation by the meat technician was a somewhat better indicator of the yield of retail cuts than any combination of the objective measures studied. This indicates an important area for further study.

The studies made to date have pointed up the fact that the primary value determining factors—quality and cutability—are far from being perfectly correlated. Consequently their combination into a single grade, as is done at the present time, represents a compromise between these two factors. It is in an attempt to resolve this compromise and to add to



TRUCKS increase their share of Produce Traffic

by Clem C. Linnenberg, Jr., and James M. Henderson

MORE AND MORE fresh vegetables and fruits are moving to market by truck.

Recent AMS marketing research on shipments of apples, celery, grapefruit, lettuce, oranges, potatoes, tomatoes, and watermelons unloaded at 12 major markets reveals that, while total movement of this produce by rail and truck to these markets rose by only 7 percent between 1951 and 1957, truck movements rose 25 percent—from 166,522 to 207,345 carlots.

In the same period, rail shipments of the 8 commodities to the 12 markets dropped off 14 percent—from 146,611

to 126,442 carlots.

Thus, the truck portion of this traffic rose from 53 percent in 1951 to 62 percent in 1957. Over 30,000 carlots which would have moved by rail if the railroads had kept their 1951 share of the total now went by truck.

Trucks improved their position throughout almost all the movements studied, but at widely varying rates. Between 1951 and 1954, the shift from rail to truck was most pronounced in shipments of oranges, grapefruit, and potatoes arriving in the Northeast—namely, New York, Boston, Philadelphia, and Baltimore. Shippers in Florida and Maine originated about three-fourths of the carlots which went over to trucks during this period.

Distances involved in the movement

of fresh produce over highways appear to be increasing. Traditionally, highway movement has been regarded as short haul; but about seven-tenths of the total change to trucks between 1951 and 1954 occurred on hauls of 751 to 1,500 miles.

The switch to trucks is one of the more significant developments in agricultural marketing. As producing areas for fresh fruits and vegetables become more remote from the great centers of consumption, these commodities have to move longer distances, and the role of transportation becomes increasingly important in the marketing picture.

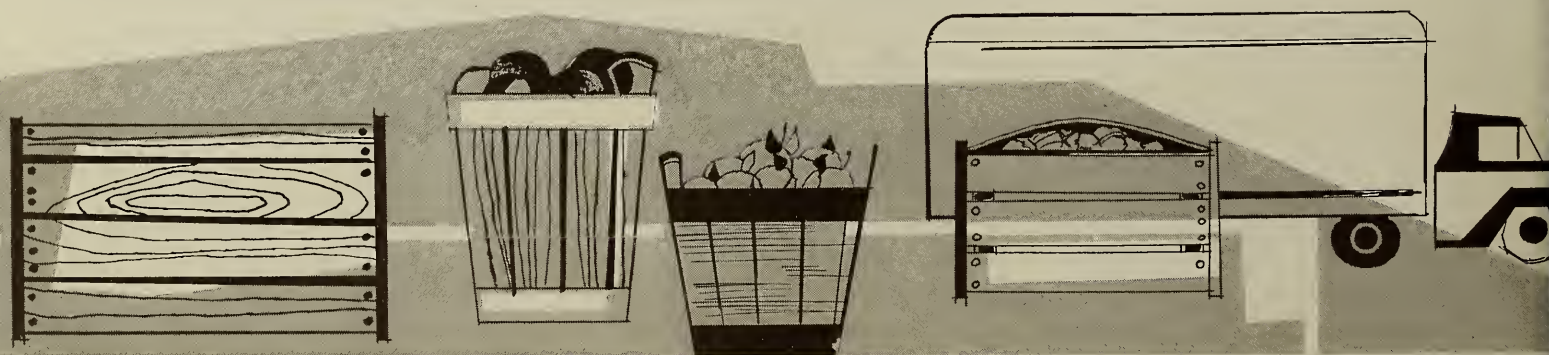
In addition, marketing experts point to the close relationship between transportation patterns and marketing procedures. As more produce moves by motor carrier, marketing institutions tend to become decentralized. Fresh produce moving in relatively small lots by truck often flows more directly from producer to consumer, by-passing the auction and large wholesale markets.

What are the factors causing this change from rail to trucks? Wide variations in the change, both from the standpoint of individual commodities and various sections of the country, lead to the conclusion that many of the reasons are of a local nature.

For example, the heavy inroads made by trucks into shipments of potatoes from Maine to Boston—a relatively short haul—probably resulted from increases in previously low rail rate levels. Extensive highway resurfacing there also improved the motor carriers' competitive position.

But as mentioned before, the change is not limited to short hauls. Florida shippers show a generally increasing preference for truck movement for longer hauls—especially for citrus shipments to New York City (approximately

Dr. Linnenberg is a staff member of the Marketing Research Division of AMS. At the time that this research study was made, Mr. Henderson was also a staff member of that organization.



1,200 miles). A rate advantage favoring highway movement, caused by increasing rail rates without comparable truck rate increases, resulted in a drastic decline in the proportion of shipments by rail. Imposition of rail freight car unloading charges at New York City and Philadelphia also encouraged the swing to trucks.

Between 1951 and 1954, heavy shifts also appeared in the movement of Florida tomatoes to New York. Here again, a substantial rate advantage favored movement by truck.

By contrast, in Florida tomato shipments to Chicago, where the railroads then enjoyed a slight edge in rates, very little change took place. These facts point to the importance of rates as a major cause for the shifts that took place.

Time in transit is another important factor when highly perishable commodities are involved. Sometimes the speed with which motor carriers are able to deliver such commodities to points of consumption is a deciding factor.

In many instances, it is a matter of how quickly and adequately carriers adapt their rates and services to the special needs of fresh produce growers or shippers.

Door-to-door service offered by over-the-road trucks means less loading and unloading than a rail haul preceded or followed by local trucking to or from the railroad.

The shipping of fresh fruits and vegetables is highly seasonal and irregular, depending upon many factors, and demand for transportation varies accordingly. During the period between 1951 and 1957, motor carriers appeared to be more successful in adapting their rates and services to meet the special needs of fresh produce shippers.

But many of these shippers still prefer

rail movement for reasons that will continue to be of importance in the future: Uniform rates, greater stability in business dealings, information service on cars in transit, and the fact that railroad cars do not require immediate unloading.

Is the trend toward trucks irreversible? AMS specialists think not. They point out that a great volume of fresh produce still moves by rail. Both rail and highway carriers are in a good position to go after the produce traffic.

The pattern during the new few years could be strikingly different, depending upon the ability of either type carrier to respond to the special needs of produce shippers.

Recently some of the railroads have shown a keen interest in making both the quality of their service and the level of their rates more attractive to regain some of their lost produce traffic. Some of these changes grew out of negotiations which farm groups undertook with the railroads.

Within the past 3 years, rail transit time from California to New York City has been reduced from 10 days to 7. On vegetables moving from California and Arizona to the Midwest and the East, "incentive rates" have been established within the past year. To encourage heavier loading of each car, railroads are charging less per 100 pounds if the car carries a load of, say, 33,000 to 40,000 pounds instead of only 20,000 pounds.

On Florida citrus and on vegetables from the Southeast in general, "per-car" rail rates recently became effective for shipments to New England, New York City, and Chicago, and to intermediate points. This means that, if the shipper prefers, he may pay a specified sum and then load the car as heavily as he pleases with any one or more of the commod-

ities involved, instead of using the conventional rate based on actual weight. As with the "incentive rates" from California and Arizona, this new approach is intended to bring the railroads a lower average cost per hundredweight and the shippers a lower average rate.

A New England railroad had been earning about a third of its revenue from hauling Maine potatoes and a substantial amount from fertilizer as back-haul. The railroad's management became worried about the sharp rise in the movement by truck of potatoes out of Maine and of fertilizer into Maine. In 1957, it persuaded the management of connecting railroads to join in a drastic rate reduction on Maine potato shipments within New England and to other eastern States, and a rate cut of 50 percent on fertilizer from Boston to Maine.

Late in 1957, a railroad operating from the Lower Rio Grande Valley in Texas to St. Louis and Kansas City adopted piggyback service for fresh produce at rates competitive with those of the trucks. In piggyback, fully loaded truck trailers are hauled for long distances on rail flatcars. The loading and unloading of rail refrigerator cars is thus eliminated. With piggyback, door-to-door service is as feasible by rail as by truck. Total transit time from the shipper's warehouse to the receiver's warehouse is less than with conventional railroading.

Although some of these improvements have taken place too recently for their full effect to be seen, indications are that they have so far resulted in the return of considerable amounts of traffic to the railroads.

A detailed account of the shifts in rail and truck transportation for fresh fruits and vegetables may be found in Marketing Research Report No. 237.





ANTIBIOTICS for the PRESERVATION of FOOD PRODUCTS

by Harold T. Cook and W. T. Pentzer

ORIGINALLY used only for the control of disease in man and animals, antibiotics are now being tested in many places and used to a limited extent for the control of disease in plants and for the preservation of fresh food supplies.

Of special interest to Agricultural Marketing Service scientists is the use of antibiotics as a means of preserving the shelf and storage life of fresh fruits, vegetables, poultry, and meat. For the past 6 years, research specialists in the Biological Sciences Branch have been studying the various antibiotics and

their possible use in maintaining the quality of fresh produce.

Research has clearly shown that these new chemicals offer a promising means of retarding spoilage in fresh foods and thus improving their appearance and wholesomeness.

Although still not ready for general use, antibiotics are becoming more and more acceptable for treating food items. Two antibiotics have been approved by the Food and Drug Administration for preservation of poultry. Three years ago, this agency okayed the use of chlortetracycline, and a year later it gave its approval to oxytetracycline. About 8 percent of the poultry processed in the United States is now treated with one of these antibiotics.

Approval of these and other antibiotics for further use on other fresh foods will depend on whether they can be proven safe for human consumption.

The procedure for treating poultry is to cool the eviscerated birds in a chill tank of water and crushed ice to which the antibiotic has been added. The solution is usually agitated by compressed air, and the temperature of the birds reduced to about 34° F. in 1 or 2 hours. Birds are then removed from the treating solution, drained, packaged, and stored under refrigeration.

Treated birds remain in acceptable condition under commercial refrigeration (32°-40° F.) for 14 to 21 days. This is 5 to 10 days longer than untreated birds. When the bird is cooked, no antibiotic residue remains.

Preservation of poultry meat by adding antibiotics to the feed or drinking water also has been investigated. Best results were obtained by using this in conjunction with the dip treatment.

Extensive studies in various public and commercial laboratories indicate that antibiotics are useful in retarding spoilage of poultry meat. They are, however, no substitute for adequate refrigeration, sanitation, transportation, and inventory practices. For this reason, one commercial preparation of antibiotics for poultry meat is sold under a closely regulated franchise arrangement. In the first 10 months of its use, 45 percent of the plants applying to antibiotic manufacturers for a franchise

were rejected. Some of these later made the necessary improvements and received a franchise.

Research has indicated that antibiotic treatments are effective in retarding spoilage in red meats. By using antibiotics, it is possible to truck carcasses without refrigeration to markets as far as 500 miles away.

Cattle and sheep may be treated with antibiotics at the time of slaughter by injecting the chemicals into the jugular vein or carotid artery. This method is especially effective because the antibiotic quickly comes in contact with the bacteria in the lymph nodes which are responsible for internal spoilage of meat when it is not refrigerated within 20 to 24 hours. Spraying the outside of the carcass with the antibiotic helps retard surface spoilage.

Promising results also have been obtained with antibiotic treatment of fresh fruits and vegetables. In early experiments by USDA marketing researchers, spinach that was sprayed 1 to 5 days before harvest or dipped momentarily in a solution of streptomycin had a shelf life of 1 or 2 days longer than untreated spinach. Similar results were obtained with cole slaw. Research elsewhere showed that peas, broccoli, cauliflower, and lima beans may benefit by this and other antibiotics.

In research by the USDA and other institutions, several antibiotics have shown promise for control of brown rot and rhizopus rot on peaches.

A 100 p.p.m. solution of rimocidin sprayed on peaches as they were graded reduced brown rot 44 percent and rhizopus rot 62 percent. Dipping or hydrocooling peaches in other antibiotics brought a marked reduction in brown rot.

The results to date with fruits and vegetables are encouraging. However, new antibiotics and new methods of application are needed that will give even greater reduction in decay and be safer for the consumer. Streptomycin, which was used in the tests with spinach and cole slaw, will probably never be acceptable to health authorities because it is not completely destroyed by cooking and because it is primarily important for treatment of disease.

Harold T. Cook is Assistant Chief, Biological Sciences Branch, Marketing Research Division, AMS. Mr. Pentzer is Chief of that Branch.

Much research has been conducted in the use of antibiotics for retarding spoilage of fish. Scientists in the United States, Canada, and Japan have been making extensive studies on this phase of quality maintenance. Canada recently approved the use of two antibiotics (chlortetracycline and oxytetracycline) in raw fish, providing their concentration does not exceed 5 p.p.m.

Antibiotics are used for fish preservation by incorporating them in the ice or adding them to the sea water in which the fish are kept. With whales, the antibiotic may be injected into the visceral cavity when the whale is inflated for towing.

The storage life of various kinds of fish can be extended 3 to 12 days beyond the normal period by use of these methods. Residues of the antibiotics now approved for fish are almost completely destroyed when the fish are cooked.

The use of antibiotics for preservation of food has been of much concern to public health authorities. The anti-

biotics themselves may be harmful to consumers or the consumer may become sensitized to the specific antibiotic. Then, too, antibiotics in foods may give rise to strains of food spoilage organisms that are resistant to the specific antibiotic used or they may cause a suppression of the normal microflora in foods and permit the development of more harmful food poisoning bacteria and fungi.

Despite these several disadvantages, Agricultural Marketing Service scientists believe that antibiotics hold great promise and that with further research acceptable antibiotic treatments will be developed for retarding spoilage of fresh foods. They are most effective when used as a supplement to refrigeration and under good sanitary conditions.

Although antibiotics are already being used commercially on poultry and fish, their use for the preservation of other food products is still in the experimental stage. Much remains to be determined about the desirability of using them on certain kinds of food.

To preserve fresh poultry, antibiotic is mixed with water and poured into tanks in which birds are cooled. Chip ice is then added to complete cooling process, submerge poultry in solution.

Chill tank, now iced, is wheeled into cold room where attendant installs bubbler to agitate antibiotic solution through tank. If properly done, this process increases storage life 5-10 days.



Marketing Firms Build New Plants

Food marketing firms, some of whom are in need of remodeling and modernization, will continue to spend substantial funds for new plant and equipment during the coming year.

Improvements will be aimed at reducing unit costs and producing new products.

Last year, total investments in plant and equipment were down slightly. Food and beverage manufacturers spent \$737 million in 1958 on expansion and improvements, compared to \$850 million in 1957. Similar investments by manufacturers of textile products and by railroads were down even more sharply. Other transportation firms also reduced their investments.

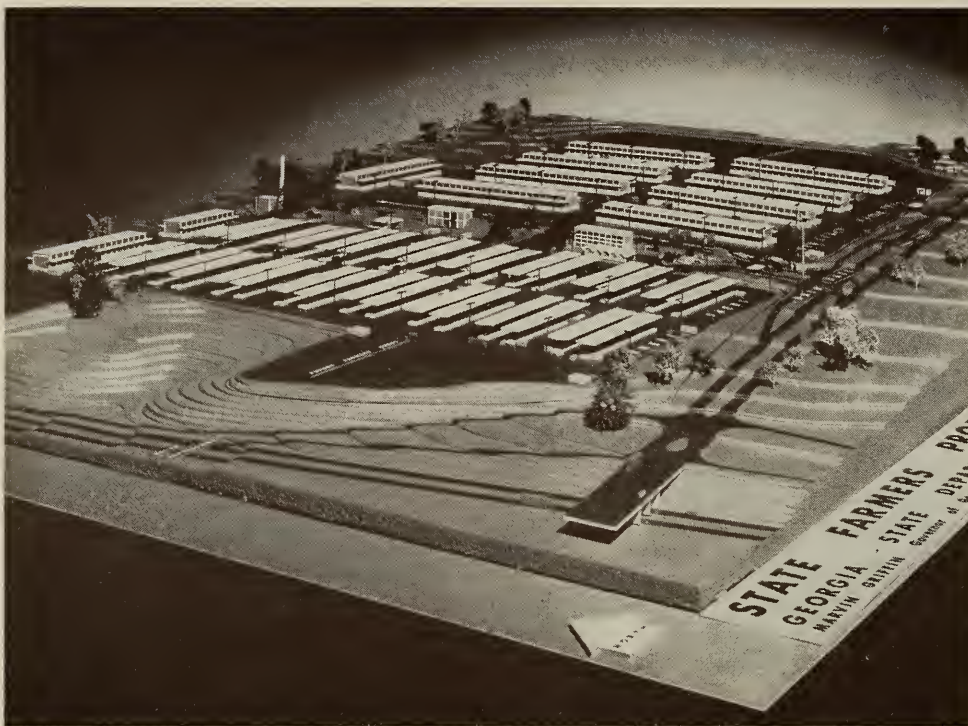
Although retail food chains have continued to open new supermarkets, trade publications report that many areas are becoming saturated with supermarkets

The Shift in Fruit Consumption

Data on fruit consumption in the past decade has several stories to tell and they're all different.

Fresh and dried fruit, for example, have experienced a sharp decrease in per capita consumption since 1946. Frozen fruits and juices have skyrocketed. Canned juices show a slight decline, and canned fruits have maintained their level of consumption.

While all this was going on, total per capita consumption went down between 1946 and 1950, then leveled off at about 200 pounds. For the past 8 years, there has been little change in the per capita consumption of fruit. Total consumption, therefore, has increased with the increase in population.



The general design of the Atlanta State Farmers' Market allows plenty of room for future expansion.

New Farmers' Market Opens in Atlanta

by Jack Gilchrist

THE "Open for Business" sign will go up the middle of this month at the new Atlanta State Farmers' Market.

Built at the cost of \$10,000,000, the market is one of the most modern marketing facilities of its kind. It has been designed to meet not only present, but also future, needs of Georgia produce growers and buyers.

The new market is located just south of Atlanta on U. S. Highway 41. Of easy access by both truck and rail, the site consists of 146 square acres with approximately 440,000 square yards of pavement.

Sixteen farmers' sheds provide 102,400 square feet of covered dock area and 389,120 square feet of covered loading and unloading space. There are 1,024 ten-foot wide sales spaces.

Nine dealers' buildings will afford another 510,750 square feet of enclosed space and covered dock area. About a

fourth of this is refrigerated.

A hamper house, cannery, service station, and two large air-conditioned restaurants are provided for the convenience of patrons, dealers, and farmers.

An administration building will house barber shops, a meeting room, food inspection and marketing information services as well as offices for food brokers and management.

All buildings in the market facility are of structural concrete to reduce fire loss and keep maintenance at a minimum. The entire site is enclosed with a man-proof chain link fence, and entrances and exits are controlled from three gate houses.

The Atlanta market is the result of many years' research and planning. State and U. S. Departments of Agriculture worked closely with commercial architects in planning the layout. Members of the Georgia General Assembly helped select the site and passed the necessary legislation for financing the project.

The author is Director of Information and Education, Georgia Department of Agriculture.

Consumption Trends

Mill consumption of cotton

It appears likely that domestic mill consumption of cotton for the year ending July 31, 1959, will run above the 8 million bales of 1957-58, thus ending a two-year decline.

Mill consumption in October was above a year ago, the first time since May 1956 that monthly consumption exceeded that of the previous year. Based on first quarter data, the Department of Agriculture estimates that domestic mills will consume $8\frac{1}{4}$ million bales during 1958-59.

This estimate takes into consideration consumer incomes and spending, both of which are expected to continue their upward swing. Between the second and third quarters of 1958, retail sales of apparel rose about 5 percent.

Rice at record high

Food consumption of rice in 1959 will continue at a record high. Although no increase in per capita consumption is foreseen, the 5.7 pound average of 1957-58 marketing year is expected to be maintained.

Except for the war years of 1917 and 1918, this is the largest quantity of rice used for food in our country's history.

Poultry and eggs

Lots of turkeys, chickens, and eggs will again move through marketing channels in 1959. Per capita consumption of poultry meats will reach new records, and egg consumption may rise slightly from 1958.

According to the Agricultural Marketing Service, chickens will be consumed at the rate of 29 pounds per person—up about 0.5 pound over 1958 and nearly 10 pounds over the 1947-49 average. Turkey consumption probably will continue near the record high of almost 6 pounds reached in 1957. Consumption of eggs will average about 350 per person.

OUTLOOK FOR NEW PRODUCTS

by Harry Harp

FOOD PROCESSORS and manufacturers are currently engaged in an all-out struggle for the consumer's dollar. They are using new products, new packaging, and new merchandising techniques to gain their objective.

Last year, food companies spent nearly \$100 million dollars for research into new and improved products. Additional funds were spent by food industry supply manufacturers and by the U. S. Government.

There is reason to believe that these expenditures will increase in the years ahead. Advances in technical know-how and a general acceptance of convenience foods have sparked the demand for extensive research work in both quality improvement and product innovation.

Whereas about 3,000 different food items were offered in the average supermarket 10 years ago, this number has now grown to nearly 5,000. Another 1,000 new products and new brands are expected to make their appearance during 1959.

Most of these products come from the research laboratories of private industry. But the U. S. Department of Agriculture is also working to develop broader markets for our Nation's agricultural production. Through its program of physical-science and economic research, the Department has come up with new ideas and new uses for farm food products.

A good example of product development can be found in the story of potato flakes. This product was first developed by Agricultural Research Service scientists; it was market tested by Agricultural Marketing Service analysts. This was in 1956. Today, potato flakes are being produced commercially by six

firms, and several others have expressed an interest in the product.

The advantages afforded by potato flakes are several. They provide producers and processors with another outlet for plentiful potato harvests. They offer housewives a more convenient product, and they allow marketing men a real savings in transportation and handling costs.

The development and testing of potato flakes is but one of the many research projects undertaken by USDA. Marketing analysts in AMS are constantly seeking new outlets for farm-produced foods and fibers. They do this by conducting consumer preference studies, by market testing new products, and by checking the availability of various agricultural commodities.

From this research has come a broad expansion in product development and improvement, new technology, and mass merchandising techniques. The resulting increase in marketing efficiency has, in turn, led to the promotion of more

and more new products of high quality but low relative cost.

Convenience foods, often thought of as luxury items, are now available at little extra cost to the consumer. A recent pilot study by AMS showed that convenience foods cost only 1 percent more than their unserved counterparts. The greater use of technology in processing these products, plus an expanding sales volume, has reduced the relative cost of convenience foods.

Generous supplies of these prepared and partially prepared foods are now being bought by American housewives. These foods are canned, frozen, dehydrofrozen, dehydrated, super-concentrated, premixed, precooked, or baked and frozen.

Within the next year, product developers predict a further increase in the sales volume of prekitchen prepared foods. Dehydrofrozen apple slices, peas, and carrots will be introduced for institutional use. An improved form of sterile milk concentrate and a fresh-tasting stable whole milk powder may also become commercial realities in the next few years.

All of these product innovations are important to the agricultural sector of our economy. New products mean new uses for our farm food products. As such, innovation is a key element in the successful marketing of our Nation's agricultural production.

Potato flakes from the research laboratories of U. S. Department of Agriculture are market tested for consumer reaction. Well accepted, these flakes are being produced commercially by 6 firms.



The author is a staff member of the Marketing Research Division of AMS.

The Changing Market

Calorie consumption down

Diet-conscious Americans continued to keep their calorie consumption down during 1958. They ate 1 percent fewer calories this year than last.

However, the nutritive value of the foods they ate was not much changed. Only iron, niacin, and ascorbic acid showed slight decreases in per capita consumption—iron and niacin because of a decrease in potato and meat consumption; ascorbic acid because of the short supply of citrus fruit.

Compared with the 1947-49 average, the greatest difference among the nutrients showed up for Vitamin A value and ascorbic acid. Per capita consumption of both these vitamins were down about a tenth; availability also declined somewhat.

Ascorbic acid consumption probably will go up again in 1959 along with a more abundant citrus crop. Other nutrients are not expected to vary much from their 1958 levels.

Trends in prepackaging

Consumer units are the big trend in retailing fresh fruits and vegetables. A lot of this prepackaging is performed by the retail stores; however, much more of it is done before the produce reaches the retail level—by growers, shippers, and wholesale distributors.

AMS researchers estimate that about 90 percent of the carrots marketed last year arrived at the store in some type of consumer package, 65 percent of the tomatoes, 55 percent of the potatoes, 35 percent of the dry onions, and 10 percent of the sweet corn.

Almost all of the strawberries, blackberries, blueberries, cranberries, and raspberries were packaged for the consumer before they reached the retail store. So were 35 percent of the apples, 20 percent of the grapefruit and oranges, and 7 percent of the fresh peaches.

Those who work closely with produce packaging believe that 80 to 90 percent of all fresh fruits and vegetables may eventually be packaged in consumer units.

Imported specialty foods

Imported specialty foods are offering U. S.-produced food products stiff competition as impulse items.

A good many supermarkets are now stocking these luxury items, and sales are increasing steadily. Trade sources estimate the wholesale volume of specialty foods has jumped from \$39 million in 1931 to nearly \$100 million in 1958. About 70 percent of this is imported.

The increasing interest in foreign foods stems, in part, from the fact that many Americans traveling abroad have developed a taste for the exotic foods of Europe and the Orient. They also have more disposable income to spend on luxury items.

65 million Americans smoke

About 59 million Americans may be considered daily cigarette, cigar, and pipe smokers. Another 6 million smoke occasionally.

This is the finding of AMS researchers, who unearthed several other interesting facts about those who buy and consume tobacco products.

Daily cigarette smokers include 33½ million men, 21 million women.

Approximately 12 million men smoke cigars regularly or occasionally, and over 8 million men smoke pipes. A large number of those who smoke cigars or pipes occasionally are daily cigarette smokers.

Clamp lift trucks for cotton

Industrial lift trucks offer cotton warehouse operators an efficient, low-cost means of handling bales in the warehouse. These trucks can unload the bales, transport them within the warehouse, stack and unstack them, and load them out. With special attachments, they can even pull a selected bale out of a stack.

Large lift trucks can carry as many as six 500-pound bales of cotton at a time. However, the 4-bale size truck is large enough for most warehouse operations, and it is particularly useful as a general-purpose machine.

The size and type of equipment best suited to a particular warehouse depends upon the design of the warehouse and the method used in handling the cotton. Since every plant is constructed differently and every operator handles his operation in his own way, each case should be considered separately in deciding the handling system to use. No one combination of equipment and methods is best for all plants.

Comparisons of the economy and efficiency of different combinations of equipment and methods can be found in Marketing Research Report No. 250, "Handling Bales of Cotton in Public Warehouses."